

REMARKS

Claims 1-37 are pending in the above identified application. Claims 1-6 have been withdrawn from consideration and canceled in this application. The Examiner has rejected claims 7-9 and 15. The Examiner has objected to claims 10-14 and 16-27. The specification has been amended to correct some grammatical errors. The figures have been amended to provide the legend --Prior Art-- to Figures 1A, 1B, and 1C. Claims 1-6 have been canceled. Claims 7, 25-27, and 29 have been amended for clarity. New claims 38-45 have been added. No new matter has been added by these amendments.

Elections/Restrictions

The Examiner has restricted the claims to Group I claims 1-6, "drawn to a transmission system comprising a plurality of transmitters, classified in class 375, subclass 295" and Group II claims 7-37 "drawn to a transmission system comprising a plurality of receivers, classified in class 375, subclass 316." In the interest of furthering prosecution on this application, and without agreeing with the Examiner regarding the need of a restriction in this application, Applicants confirm the election made on December 9, 2004, to Group II claims.

Subsequently, claims 1-6 are withdrawn from consideration in this application. Further, Applicants have canceled claims 1-6 from this application. Applicants reserve the right to pursue claims 1-6 in a subsequently filed application.

Drawings

The Examiner has indicated that the drawings filed with the application are acceptable for examination purposes but that formal drawings will be required when the application is allowed. Applicants will file the formal drawings at, or before, allowance of the application.

The Examiner has further indicated that Figures 1A-C should be designated by legend as --Prior Art--. Accordingly, Figures 1A, 1B, and 1C have been amended to provide the legend --Prior Art--.

Specification

The Examiner has suggested that Applicants define the acronym SERDES in paragraph [005] of page 2 of the specification. The acronym SERDES is defined in the last sentence of paragraph [004] on pages 1-2. Paragraph [004] states: "Typically, the transceiver for sending high-speed data over a backplane **is called a serializer/deserializer, or SERDES, device.**" (emphasis added).

Applicants have further amended the specification to correct some minor grammatical errors. No new matter has been added by these amendments.

Claim Rejections under 35 U.S.C. § 102

The Examiner has rejected claim 7 "under 35 U.S.C. 102(b) as being anticipated by Rowan et al. (WO 99/45683)." However, Rowan does not teach all of the elements of claim 7. For example, Rowan does not teach "an equalizer coupled to receive the digitized signals" as is recited in claim 7.

Rowan teaches "transmission of digital data over optical fibers, and more particularly, to transmission based on quadrature amplitude modulation (QAM) and frequency division multiplexing." (Rowan, page 1, lines 11-13). The Examiner has identified element 1002 of Rowan as an equalizer. However, element 1002 is simply a QAM demodulator and is not an equalizer. An equalizer counters intersymbol interference that can be caused by dispersion in the

transmission medium and reflections from other vias, which has the effect of mixing the transmitted symbols to form the signal received at the receiver. An equalizer recovers sequentially transmitted symbols from the input signal, where the transmitted symbols have been mixed due to distortions in the transmission medium.

As taught in Rowan, "QAM demodulator 1002 removes the QAM modulation from the incoming QAM-modulated signal 712." (Rowan, page 15, lines 10-11). Further, Rowan teaches that "QAM demodulator 1002 demodulates the incoming QAM-modulated signal 712A, typically extracting baseband I and Q signals from the modulated carrier." (Rowan, page 16, lines 21-22). The QAM demodulator, then, simply recovers the originally sent data from each individual symbol.

Further, it is not obvious to include an equalizer into the teachings of Rowan. Because Rowan teaches transmission of data over an optical system, dispersion effects such as intersymbol interference that can become problematic in other transmission media are not observed. Consequently, the need for equalization in a transmission system as taught by Rowan does not exist.

Therefore, claim 7 is allowable over Rowan.

Claim Rejections Under 35 U.S.C. § 103

The Examiner has rejected claims 8, 9, and 15 "under 35 U.S.C. 103(a) as being unpatentable over Rowan et al. (WO99/45683) as applied to claim 7 above, and further in view of Baker et al. US Patent 6,163,563."

Claims 8, 9, and 15 depend from claim 7 and are allowable over Rowan for at least the same reason as is claim 7. Baker does not cure the defects in the teachings of Rowan. As

discussed above, Rowan does not teach an “equalizer” as is recited in claim 7. Baker teaches spread-spectrum transmission of data utilizing wireless communications. Baker does not teach an equalizer as is recited in claim 7. Further, for similar reasons as is discussed above, utilization of an equalizer in the transmission system of Baker is not obvious.

Allowable Subject Matter

The Examiner indicates that claims 10-14 and 16-37 are allowable “if rewritten in independent form including all of the limitations of the base claim and any intervening claims.” However, these claims depend from claims 7-9 and 15, which are allowable over the cited prior art as discussed above. Therefore, no amendments have been made to claims 10-14 and 16-37 at this time.

New Claims

Claims 38-45 have been added in this Amendment. Support for new claims 38-45 can be found throughout the application, for example in Figure 5 and the discussion related to Figure 5. Claims 38-45 are allowable over the prior art for the same reasons as is claims 7-37.

Conclusion

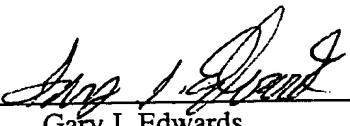
In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: March 17, 2005

By: 
Gary J. Edwards
Reg. No. 41,008.

Attachments: Replacement sheet 1, Figures 1A, 1B, and 1C.

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EV 606105955 US



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9146-0001-01

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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|----------------------|------------------|
| 09/965,242 | 09/26/2001 | Sreen A. Raghavan | M-11923-IP US | 3308 |
| 22852 | 7590 | 06/28/2005 | EXAMINER | |
| FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413 | | | WILLIAMS, LAWRENCE B | |
| | | ART UNIT | PAPER NUMBER | |
| | | 2638 | | |

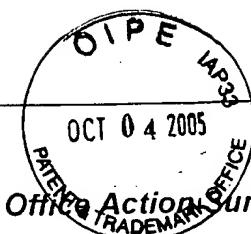
DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

JUN 30 2005
FINGERHUT, JENNIFER
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, LLP

Docketed 6/30/05 CLO/CSE
Case 9146-0001-01
Due Date 9/28/05 W/EXT
Action RESPONSE
By [Signature]

J. P. Morris



| | | | |
|------------------------------|----------------------------------|------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/965,242 | RAGHAVAÑ ET AL. | |
| | Examiner Lawrence B. Williams | Art Unit 2634 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on amendment filed on 17 March 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 7-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 7-9, 15, 38, 39 and 45 is/are rejected.
- 7) Claim(s) 10-14, 16-37 and 40-44 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 26 September 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the plurality of receivers, down converter, filter coupled to receive signals from the down converter, analog-to-digital converter, equalizer and decoder as claimed in claim 1, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency.

Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Response to Arguments

2. Applicant's arguments with respect to claims 7-9, 15 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7, 38, 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan (US Patent 6,259,745 B1) in view of Wang (US Patent 5,822,368).

(1) With regard to claim 7, Chan discloses in Fig. 1, a transmission system, comprising: a plurality of receivers, each of the plurality of receivers receiving signals from one of a plurality of transmission bands (col. 28, lines 30-34). Chan does not however disclose the make up of the receivers. However, Wang teaches a receiver in Fig. 5, wherein the receiver comprises a down converter (510, 512) that converts an input signal from the one of the plurality of transmission bands to a base band; a filter (590) coupled to receive signals from the down converter, the filter substantially filtering out signals not in the base band; an analog-to-digital converter (515) coupled to receive signals from the filter and generate digitized signals; an equalizer (570) coupled to receive the digitized signals; and a decoder (315, 310) coupled to receive signals from the equalizer and generate recreated data, the recreated data being substantially the same data transmitted by a corresponding transmitter.

It would have been obvious to one skilled in the art at the time of invention to incorporate the teachings of Wang into the invention of Chan as a method or reducing error rate and to design a more reliable system (col. 1, line 26-39).

(2) With regard to claim 38, claim 38 inherits all limitations of claim 1 above as claim 38 merely discloses the method of transmission system disclosed in claim 1.

(3) With regard to claim 45, claim 45 inherits all limitations of claim 1 above.

5. Claims 8, 9, 15, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan (US Patent 6,259,745 B1) in view of Wang (US Patent 5,822,368) as applied to claims 7 and 38 above, and further in view of Baker et al. (US Patent 6,163,563).

(1) With regard to claim 8, as noted above, Chan in combination with Wang disclose all limitations of claim 7. They do not however teach wherein the down-converter creates an in-phase signal and a quadrature signal, the in-phase signal being the input signal multiplied by a cosine function at the frequency of the one of the plurality of transmission bands and the quadrature signal being the input signal multiplied by a sine function at the frequency of the one of the plurality of transmission bands.

However, Baker et al. teaches in Fig. 1, wherein the down-converter (24) creates an in-phase signal and a quadrature signal, the in-phase signal being the input signal multiplied by a cosine function (34) at the frequency of the one of the plurality of transmission bands and the quadrature signal being the input signal multiplied by a sine function (36) at the frequency of the one of the plurality of transmission bands (col. 4, line 58-col. 5, line 11).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Baker et al. to modify the invention of Chan in combination with Wang for its known usefulness in communication systems employing integrated circuits (col. 16, lines 20-52).

(2) With regard to claim 9, Baker et al. also discloses in Fig. 1, wherein the filter includes an in-phase filter (42) filtering the in-phase signal and a quadrature filter (44) filtering the quadrature.

(3) With regard to claim 15, claim 15 inherits all limitations of claim 8 above. Furthermore Baker et al. discloses in Fig. 1, wherein the analog-to-digital converter includes a first analog-to-digital converter (46) coupled to receive signals from the in-phase filter and a second analog-to-digital converter (48) coupled to receive signals from the quadrature filter.

(4) With regard to claim 39, claim 39 inherits all limitations of claim 8 and 38 above.

Allowable Subject Matter

6. Claims 10-14, 16-37, 40-44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.) Higashiyama discloses in US Patent 4,679,225 Signal Transmission Apparatus

For A Multiple Channel System And Method For Using The Same.

b.) Rowan et al. discloses in US Patent 6,529,303 B1 Optical Communications Networks Utilizing Frequency Division Multiplexing.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence B. Williams

lbw
June 25, 2005



KENNETH VANDERPUYE
PRIMARY EXAMINER

| | | | | |
|-----------------------------------|--|----------------------------------|--|-------------|
| Notice of References Cited | | Application/Control No. | Applicant(s)/Patent Under Reexamination RAGHAVAN ET AL. | |
| | | Examiner Lawrence B. Williams | Art Unit 2634 | Page 1 of 1 |

U.S. PATENT DOCUMENTS

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | Classification |
|---|---|--|-----------------|---------------------|----------------|
| | A | US-6,529,303 B1 | 03-2003 | Rowan et al. | 398/82 |
| | B | US-4,679,225 | 07-1987 | Higashiyama, Mitsuo | 455/410 |
| | C | US-5,822,368 A | 10-1998 | Wang, Jin-Der | 375/229 |
| | D | US-6,259,745 B1 | 07-2001 | Chan, Kevin T. | 375/285 |
| | E | US- | | | |
| | F | US- | | | |
| | G | US- | | | |
| | H | US- | | | |
| | I | US- | | | |
| | J | US- | | | |
| | K | US- | | | |
| | L | US- | | | |
| | M | US- | | | |

FOREIGN PATENT DOCUMENTS

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Country | Name | Classification |
|---|---|--|-----------------|---------|------|----------------|
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NON-PATENT DOCUMENTS

| * | | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages |
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| | U | |
| | V | |
| | W | |
| | X | |

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)

Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|----------------------|------------------|
| 09/965,242 | 12/17/2004 | Sreen A. Raghavan | M-11923-1P US | 3308 |
| 7590 | 12/17/2004 | | EXAMINER | |
| FINNEGAN, HENDERSON, FARABOW GARRETT & DUNNER, L.L.P. 1300 I STREET, N.W. WASHINGTON, DC 20005-3315 | | | WILLIAMS, LAWRENCE B | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2634 | |

DATE MAILED: 12/17/2004

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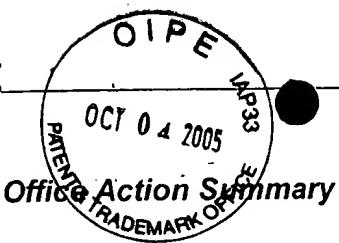
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DEC 22 2004

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, LLP

Docketed 12/24/04 Attorney CLO/ EJT
Case 09/965-0001
Due Date 3/14/5 w/crt
Action 1st p. due
By JD

[Signature]



| | | |
|---------------------|-----------------|-----------------|
| | Application No. | Applicant(s) |
| | 09/965,242 | RAGHAVAN ET AL. |
| Examiner | Art Unit | |
| Lawrence B Williams | 2634 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 26 September 2001.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 1-6 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 7-9 and 15 is/are rejected.
- 7) Claim(s) 10-14 and 16-27 is/are objected to.
- 8) Claim(s) 1-6 are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 26 September 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. 1.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-6, drawn to a transmission system comprising a plurality of transmitters, classified in class 375, subclass 295.
 - II. Claims 7-37, drawn to a transmission system comprising a plurality of receivers, classified in class 375, subclass 316.
2. During a telephone conversation with Gary Edwards on 09 December 2004 a provisional election was made without traverse to prosecute the invention of a transmission system comprising a plurality of receivers, claims 7-37. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-6 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

3. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
4. Figures 1A - C should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37

Art Unit: 2634

CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities: Examiner suggests applicant define the acronym SERDES in paragraph [005] of page 2 of the specification. Appropriate correction is required.

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Rowan et al. (WO 99/45683).

(1) With regard to claim 7, Rowan et al. discloses in Fig(s). 9B – 11, a transmission

system, comprising: a plurality of receivers, each of the plurality of receivers receiving signals from one of a plurality of transmission bands, at least one of the plurality of receivers comprising: a down converter (912, 916) that converts an input signal from the one of the plurality of transmission bands to a base band; a filter (914) coupled to receive signals from the down converter, the filter substantially filtering out signals not in the base band; an analog-to-digital converter (918) coupled to receive signals from the filter and generate digitized signals; an equalizer (1002) coupled to receive the digitized signals; and a trellis decoder (1100) coupled to receive signals from the equalizer and generate recreated data, the recreated data being substantially the same data transmitted by a corresponding transmitter (pg. 14, line 22- pg. 15, line 27).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 8, 9, 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Rowan et al. (WO 99/45683) as applied to claim 7 above, and further in view of Baker et al. US Patent 6,163,563).

(1) With regard to claim 8, as Noted above, Rowan et al. discloses all limitations of claim 7. Rowan does not however teach wherein the down-converter creates an in-phase signal and a quadrature signal, the in-phase signal being the input signal multiplied by a cosine function at the

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frequency of the one of the plurality of transmission bands and the quadrature signal being the input signal multiplied by a sine function at the frequency of the one of the plurality of transmission bands.

However, Baker et al. teaches in Fig. 1, wherein the down-converter (24) creates an in-phase signal and a quadrature signal, the in-phase signal being the input signal multiplied by a cosine function (34) at the frequency of the one of the plurality of transmission bands and the quadrature signal being the input signal multiplied by a sine function (36) at the frequency of the one of the plurality of transmission bands (col. 4, line 58-col. 5, line 11).

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to apply the method as taught by Baker et al. to modify the invention of Rowan et al. for its known usefulness in communication systems employing integrated circuits (col. 16, lines 20-52).

(2) With regard to claim 9, Baker et al. also discloses in Fig. 1, wherein the filter includes an in-phase filter (42) filtering the in-phase signal and a quadrature filter (44) filtering the quadrature.

(3) With regard to claim 15, claim 15 inherits all limitations of claim 8 above. Furthermore Baker et al. discloses in Fig. 1, wherein the analog-to-digital converter includes a first analog-to-digital converter (46) coupled to receive signals from the in-phase filter and a second analog-to-digital converter (48) coupled to receive signals from the quadrature filter.

11. Claims 10-14, 16-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:
The instant application discloses a communication system that allows high data-rate transmission of data between components. A search of prior art records has failed to teach a communication system "including an offset block coupled between the down-converter and the filter, the offset block offsetting the in-phase signal and the quadrature signal such that signals output from the analog-to-digital converter averages zero" or "including an amplifier coupled between the filter and the analog-to-digital converter, the amplifier amplifying an in-phase filtered signal from the in-phase filter and a quadrature filter signal from the quadrature filter such that the analog-to-digital converter is filled". As disclosed in claims 10 and 11, respectively.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a.) Ziegler et al. discloses in US 2003/0112798 A1 a Data Communication Method.
- b.) Hendrickson et al. discloses in US 2002/0093994 A1 a Reverse Data De-Skew Method and System.

c.) Scott discloses in US Patent 4,710,992 Apparatus and Associated Method For
Converting Serial Data Pattern Signals Transmitted or Suitable For Transmission Over a High
Speed Synchronous Media To Parallel Pattern Output Signals.

d.) Scott discloses in US Patent 5,079,770 Apparatus and Associated Method For
Converting Serial Data Pattern Signals Transmitted or Suitable For Transmission Over a High
Speed Synchronous Media To Parallel Pattern Output Signals.

e.) Shimizu discloses in US Patent 5,293,378 Parallel Multi-Line Packet Transmission
System.

14. Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Lawrence B Williams whose telephone number is 571-272-3037.
The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the
organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent
Application Information Retrieval (PAIR) system. Status information for published applications
may be obtained from either Private PAIR or Public PAIR. Status information for unpublished
applications is available through Private PAIR only. For more information about the PAIR
system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR
system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Lawrence B. Williams

lbw

December 11, 2004



STEPHEN CHIN
SUPERVISORY PATENT EXAMINE
TECHNOLOGY CENTER 2800

| | | |
|---|---------------------------------|---------------------|
| Examiner-Initiated Interview Summary | Application No. | Applicant(s) |
| | 09/965,242 | RAGHAVAN ET AL. |
| | Examiner Lawrence B Williams | Art Unit 2634 |

All Participants:

(1) Lawrence B Williams.

Status of Application: Non-Final

(3) _____

(2) Gary Edwards.

(4) _____

Date of Interview: 9 December 2004

Time: 1:00

Type of Interview:

- Telephonic
- Video Conference
- Personal (Copy given to: Applicant Applicant's representative)

Exhibit Shown or Demonstrated: Yes No

If Yes, provide a brief description:

Part I.

Rejection(s) discussed:

Claims discussed:

1-6

Prior art documents discussed:

Part II.

SUBSTANCE OF INTERVIEW DESCRIBING THE GENERAL NATURE OF WHAT WAS DISCUSSED:

Restriction concerning claims 1-6

Part III.

- It is not necessary for applicant to provide a separate record of the substance of the interview, since the interview directly resulted in the allowance of the application. The examiner will provide a written summary of the substance of the interview in the Notice of Allowability.
- It is not necessary for applicant to provide a separate record of the substance of the interview, since the interview did not result in resolution of all issues. A brief summary by the examiner appears in Part II above.

(Examiner/SPE Signature)

(Applicant/Applicant's Representative Signature – if appropriate)

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|-----------------------------------|--|---------------------------------------|---|-------------|
| Notice of References Cited | | Application/Control No. 09/965,242 | Applicant(s)/Patent Under Reexamination RAGHAVAN ET AL. | |
| | | Examiner Lawrence B Williams | Art Unit 2634 | Page 1 of 1 |

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| | B | US-2002/0093994 | 07-2002 | Hendrickson et al. | 370/536 |
| | C | US-5,079,770 | 01-1992 | Scott, Paul H. | 370/536 |
| | D | US-4,710,922 | 12-1987 | Scott, Paul H. | 370/535 |
| | E | US-5,293,378 | 03-1994 | Shimizu, Hiroshi | 370/474 |
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*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
 Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.